

NATURAL RESOURCES CONSERVATION SERVICE

VIRGINIA CONSERVATION PRACTICE STANDARD

WASTE UTILIZATION

(Acre)

Code 633

DEFINITION

Using agricultural wastes such as manure and wastewater or other organic residues.

be responsible for securing any and all required permits or approvals related to waste utilization, and for operating and maintaining any components in accordance with applicable laws and regulations.

PURPOSES

- Protect water quality
- Provide fertility for crop, forage, and fiber production
- Improve or maintain soil structure
- Provide feedstock for livestock
- Provide a source of energy

Use of agricultural wastes shall be based on a Comprehensive Nutrient Management Plan (CNMP) and at least one analysis of the material during the time it is to be used. In the case of daily spreading, the waste shall be sampled and analyzed at least once each year. The analysis for the initial plan may be based on values found in the Agricultural Waste Management Field Handbook. As a minimum, the waste analysis should identify nutrient and specific ion concentrations. Where the metal content of municipal wastewater, sludge, seepage, and other agricultural waste is of a concern, the analysis shall also identify the concentration of metals in the material.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where agricultural wastes, including animal manure and contaminated water from livestock and poultry operations; biosolids and wastewater from municipal treatment plants; and agricultural processing residues, are generated; and/or utilized.

Where agricultural wastes are to be spread on land not owned or controlled by the producer, the waste management plan, as a minimum, shall document the amount of waste to be transferred and who will be responsible for the environmentally acceptable use of the waste.

Records of the use of wastes shall be kept a minimum of five years as discussed in the section on Operation and Maintenance.

CRITERIA

GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

All federal, state and local laws, rules and regulations governing waste management, pollution abatement, health and safety shall be strictly adhered to. The owner or operator shall

ADDITIONAL CRITERIA TO PROTECT WATER QUALITY

All agricultural waste shall be utilized in a manner that minimizes the opportunity for contamination of surface and groundwater supplies.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Agricultural waste shall not be land-applied on soils that are frequently flooded, as defined by the National Cooperative Soil Survey, Federal Emergency Management Agency (FEMA) maps or other methods for identifying floodprone areas, during the period when flooding is expected.

When liquid wastes are applied, the application rate shall not exceed the infiltration rate of the soil, and the amount of waste applied shall not exceed the moisture holding capacity of the soil profile at the time of application. Wastes shall not be applied to frozen or snow-covered ground.

ADDITIONAL CRITERIA FOR PROVIDING FERTILITY FOR CROP, FORAGE, AND FIBER PRODUCTION

Where agricultural wastes are utilized to provide fertility for crop, forage, and fiber production, the Virginia Conservation Practice Standard *Nutrient Management (Code 590)* shall be followed.

Where municipal wastewater and solids are applied to agricultural lands as a nutrient or lime source, the single application or lifetime limits of heavy metals shall not be exceeded. The concentration of salts shall not exceed the level that will impair seed germination or plant growth.

ADDITIONAL CRITERIA FOR IMPROVING OR MAINTAINING SOIL STRUCTURE

Wastes shall be applied at rates not to exceed the crop nutrient requirements or salt concentrations as stated above, and shall be applied at times when the waste material can be incorporated by appropriate means into the soil within 72 hours of application.

ADDITIONAL CRITERIA FOR PROVIDING FEEDSTOCK FOR LIVESTOCK

Agricultural wastes to be used for feedstock shall be handled in a manner to minimize contamination and preserve its feed value. Poultry litter stored for this purpose shall be covered. A qualified animal nutritionist shall develop rations which utilize wastes.

ADDITIONAL CRITERIA FOR PROVIDING A SOURCE OF ENERGY

Use of agricultural waste for energy production shall be an integral part of the overall waste management system.

All energy producing components of the system shall be included in the waste management plan and provisions for utilization of residues of energy production identified.

Where the residues of energy production are to be land-applied for crop nutrient use or soil conditioning, the criteria listed above shall apply.

CONSIDERATIONS

The effect of Waste Utilization on the water budget should be considered, particularly where a shallow groundwater table is present or in areas prone to runoff. Limit liquid waste application to the volume that can be stored in the root zone.

Minimize the impact of odors of land-applied wastes by making application at times when temperatures are cool and when wind direction is away from neighbors. Injection or immediate incorporation should also be considered to reduce odors.

Agricultural wastes contain pathogens and other disease-causing organisms. Wastes should be utilized in a manner that minimizes their disease potential.

Priority areas for land application of wastes should be on flat to gentle slopes located as far as possible from waterways. When wastes are applied on more sloping land or land adjacent to waterways, other conservation practices should be installed to reduce the potential for offsite transport of waste.

It is preferable to apply wastes on pastures and hayland soon after cutting or grazing and before re-growth has occurred. Less than 25% of live plant foliage should be covered with waste. Reduce nitrogen volatilization losses associated with the land application of some waste by incorporation within 24 hours.

Minimize environmental impact of land-applied waste by limiting the quantity of waste applied to the rates determined using the Virginia Conservation Practice Standard *Nutrient Management (Code 590)* for all waste utilization.

The operation and maintenance plan shall include the dates of periodic inspections and maintenance of equipment and facilities used in waste utilization. The plan should include what is to be inspected or maintained, and a general time frame for making necessary repairs.

PLANS AND SPECIFICATIONS

Plans and specifications for Waste Utilization shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The waste management plan is to account for the utilization or other disposal of all organic wastes produced or imported into the agricultural operation, and all waste application areas shall be clearly indicated on a plan map. The Waste Utilization Plan will serve as a subset of a more complete nutrient management plan.

OPERATION AND MAINTENANCE

Records shall be kept for a period of five years or longer, and include when appropriate:

- Quantity of manure and other organic waste produced or imported into the agricultural operation and their nutrient content
- Soil test results
- Dates and amounts of waste application where land applied, and the dates and amounts of waste removed from the system due to feeding, energy production, or export from the agricultural operation, in accordance with the approved Comprehensive Nutrient Management Plan for the agricultural operation.
- Waste application methods
- Crops grown and yields (both yield goals and measured yield)
- Other tests, such as determining the nutrient content of the harvested product
- Calibration of application equipment.

REFERENCES

1. Natural Resources Conservation Service, National Engineering Handbook, Part 651: Agricultural Waste Management Field Handbook, Chapter 11.
2. Virginia Cooperative Extension Service, Agronomy Handbook, Publication #424-100.
3. Virginia Department of Health, Division of Wastewater Engineering: Biosolids Use Regulations (12 VAC 5-585, October 1999).
4. Virginia Department of Conservation and Recreation: Nutrient Management Handbook (2nd Edition, 1993) and Virginia Nutrient Management Standards and Criteria (Rev. November 1995).
5. Virginia Department of Environmental Quality, 9 VAC 25-192-10 et. seq. (12/1/98) Virginia Pollution Abatement General Permit Regulation for Confined Animal Feeding Operations.

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Approved Practice Narratives

(Acre)

CODE 633

633 D1 Waste Utilization: Land application of liquid organic waste will be utilized as a soil amendment on farm fields in accordance with a current approved Comprehensive Nutrient Management Plan written for the agricultural operation.

633 D2 Waste Utilization: Land application of dry organic waste will be utilized as a soil amendment on farm fields in accordance with a current approved Comprehensive Nutrient Management Plan written for the agricultural operation.

633 D3 Waste Utilization: Land application of biosolid or liquid organic municipal or industrial waste will be utilized as a soil amendment on farm fields in accordance with a current Comprehensive Nutrient Management Plan written for the agricultural operation.

633 D4 Waste Utilization: Export of organic waste from an agricultural operation to be utilized as a soil amendment, animal feed, or for energy production, at a location other than the producer's agricultural operation, in accordance with a current Comprehensive Nutrient Management Plan written for the agricultural operation.

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